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EXAMINER

NGUYEN, THANH T

ART UNIT PAPER NUMBER

2813

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,216

Applicant(s)

DORDI ET AL.

Examiner

Thanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/2/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 23-51 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-28, 31-38, 42-44, 47-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Sandaiji et al. (U.S. Patent No. 4,982,065).

Referring to figures 1, Sandaiji et al. teaches an apparatus for depositing a material on a surface of a wafer, comprising:

a tank (2) defined by an enclosing wall and a bottom, the tank being configured to contain an solution (5, figure 1);

wafer support (3) structure disposed within the tank being configured to contain a solution (see figure 1);

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a wafer support structure (3) disposed within the tank (2), the wafer support structure being configured to support a wafer at a submerged position within the solution to be contained within the tank (see figures 1); and

a radiant energy source (8) disposed above the wafer support structure (3), the radiant energy source being oriented to direct radiant energy toward the wafer to be supported at the submerged position within the solution (see figure 1), wherein the radiant energy is defined to heat a material present on the wafer in exposure to the solution enable a reaction (see col. 8, lines 15-40, col. 9, lines 18-38).

Regarding to claim 24, 34, 43, 48, the radiant energy source (8) is configured to generate radiant energy having a wavelength range that is capable of selectively heating a material present at a surface of the wafer upon which the radiant energy will be incident (see col. 8, lines 15-40, col. 9, lines 18-38).

Regarding to claim 25, 35, 44, 49, the radiant energy source (8) is configured to apply a substantially uniform amount of the radiant energy over the surface of the wafer (see col. 8, lines 15-40, col. 9, lines 18-38).

Regarding to claim 26, 36, wherein the radiant energy source is stationary (8, see col. 8, lines 36-40).

Regarding to claim 27, 37, An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is configured to collimate the radiant energy, the radiant energy source being further configured to be scanned over the surface of the wafer (see col. 8, lines 54-61).

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Regarding to claim 28, 38, An apparatus for depositing a material on a surface of a wafer wherein the wafer support structure is configured to oscillate the wafer (see col. 7, lines 58-65)

Regarding to claim 31. An apparatus for depositing a material on a surface of a wafer, comprising:

a vessel (2) defined by a top, a bottom, and an enclosing wall, the vessel being configured to contain a solution (5, figure 1);

a wafer support structure (3) disposed within the vessel (2), the wafer support structure being configured to support a wafer at a position within the vessel (see figure 1); and
a radiant energy source (8) disposed above the wafer support structure (3), the radiant energy source being oriented to direct radiant energy toward the wafer to be supported within the vessel, wherein the radiant energy is defined to heat a material present on the wafer in exposure to the solution to enable a reaction (see figure 1, col. 8, lines 15-40, col. 9, lines 18-38).

Regarding to claim 32. An apparatus for depositing a material on a surface of a wafer, wherein the radiant energy source is disposed outside the vessel, the vessel being composed of a material capable of transmitting radiant energy emitted from the radiant energy source to an interior of the vessel (see figure 1).

Regarding to claim 42. An apparatus for depositing a material on a surface of a wafer, comprising:

a tank (2) defined by an enclosing wall and a bottom, the tank being configured to contain an solution (5, see figure 1);

a wafer holder (3) configured to dip a wafer into the solution to be contained within the tank, the wafer holder further configured to remove the wafer from the solution to be contained within the tank (see figure 1); and

a radiant energy source (8, see figure 1) disposed above the solution to be contained within the tank (2), the radiant energy source being oriented to direct radiant energy toward the wafer upon removal of the wafer from the solution (5) to be contained within the tank (2, see figure 1, col. 8, lines 15-40, col. 9, lines 18-38).

Regarding to claim 47. An apparatus for depositing a material on a surface of a wafer, comprising:

a tank (2) defined by an enclosing wall and a bottom, the tank being configured to contain an solution bath(5, see figure 1),

a wafer holder (3) configured to rotate a portion of the wafer through the solution bath to be contained within the tank (see , col. 8, lines 36-40, figure 1) ; and

a radiant energy source (8, see figure 1) disposed above the electroless plating solution to be contained within the tank(2), the radiant energy source being oriented to direct radiant energy toward the portion of the wafer upon rotation out of the solution bath to be contained within the tank (2, see figure 1, col. 8, lines 15-40, col. 9, lines 18-38).

The expressions of “ a the tank being configured to contain an electroless plating solution bath” in claims 23, 31, 42, 47 is taken to be mere statements of intended use which does not add any structure, therefore it has not been given any patentable weight. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a

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device does."(emphasis in original) *Hewlett - Packard Co. V. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does."(emphasis in original) *Hewlett - Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). In apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-30, 33, 39-41, 45-46, 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandaiji et al. (U.S. Patent No. 4,982,065) as applied to claims 23-28, 31-38, 42-44, 47-49 above, and further in view of Mayer et al. (U.S. Patent No. 6,713,122).

Sandaiji et al. teaches all of the claimed limitations as described above. However, the reference does not teach an inlet for supplying the electroless plating solution to the tank, and an outlet for removing the electroless plating solution from the tank, a heat exchanger capable of maintaining a temperature of the electroless plating solution to be contained within the tank, a pressure control capable of controlling a pressure of the electroless plating solution to be contained within the vessel, the radiant energy source is disposed within the vessel.

With respect to claims 29, 40, 45, 50, Mayer et al. teaches providing an inlet (207) and outlet (217) for introducing and removing solution from coating tank (see figure 2).

With respect to claims 30, 41, 46, 51, Mayer et al. teaches the use of a heat exchanger (110, see figure 1).

With respect to claim 39, Mayer et al. teaches the pressure control of the electroless plating solution (see col. 8, lines 49-53).

With respect to claims 33, Mayer et al. the radiant energy source is disposed within the vessel (see figure 1, col. 11, lines 32-47).

Therefore, it would have been obvious to one of ordinary skill in the requisite art at the time of the invention was made would provide a tank inlet and outlet for coating solution as taught by Mayer et al. in Sandaiji et al. because it would enable introduction of the solution and removal of the solution to eliminate the need of the user to process manually, provide heat exchanger to maintain the etchant coating solution as a desired temperature, radiant energy source within the vessel to provide direct energy to the solution.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 23-51 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9, 21-27 of U.S. Patent No. 10/734704. Although the conflicting claims are not identical, they are not patentably distinct from each other because both teaches a tank, a wafer support structure disposed within the tank, a radiant energy source disposed above the wafer support structure.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (571) 272-1702. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to thy Private PAIR system, contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



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